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This forwarded email should have one attachment.

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INTRODUCTION

The soils component of the Consol Energy Company Emery Reclamation Study includes soils description, sampling, and interpretation of 22 sampling sites. These sites are listed by number and name in soils Table 1. The table also contains the GPS northing and easting coordinates, as well as the topographic quadrangle map, for each site. A map showing sampling locations is on file at Mt. Nebo Scientific but is not included with this report. The resulting field and laboratory soils data was evaluated for characterization and reclamation suitability purposes. Results of this analysis are provided in Section 3.0. The soils information was also provided to Patrick Collins for integration with the vegetation results.

METHODS

The 22 soil and vegetation sampling sites were initially listed by Mr. Tim Kirshbaum (Consol Energy) in consultation with DOGM. The sites are various reclaimed areas, topsoil and subsoil stockpiles, pond areas and banks, a test plot area, and various vegetation reference areas. Because the pond areas had multiple sampling sites (Pond 6 had four sample locations – topsoil pile, subsoil pile east, subsoil pile west, and pond banks; Ponds 4 & 5 had three sample locations – pond 5 area, pond 4 area, and subsoil pile; and Pond 1 had three sample locations – topsoil pile, subsoil pile, and pond banks), the 22 sampling locations can be grouped into 15 separate site areas. Patrick Collins, in consultation with Consol, located and delineated all 22 sampling sites. A GPS northing and easting coordinate was recorded for each sampling location.

Tim Kirschbaum submitted a draft proposal of Consol's reclamation study plan to DOGM on April 1, 2003. A subsequent meeting with DOGM personnel on April 21, including Ms. Priscilla Burton, refined the sampling and analysis protocol. Two soil samples would be collected at a representative location at each sampling site. Composite samples were collected from 0 to 3 inches and from 3 to 6 inches (Kirshbaum, 2003). The upper 6 inches was considered to be the primary germination zone. A standard soil profile description would be completed for the upper 6 inches at each site (Soil Survey Staff, 1993 and 1999; and Schoeneberger et. al., 2002).

A total of 44 soil samples (22 sites x 2 samples per site) were collected and submitted to Colorado State University's Soil Testing Laboratory. The soil analysis parameters included:

- pH
- EC (mmhos/cm)
- Saturation Percent
- Lime estimate and Percent CaCO₃ equivalent
- Percent Organic Matter (Loss on Ignition)
- Percent Organic Matter (Walkley-Black)
- Ca, Mg, Na, K (meq/L)
- Sodium Adsorption Ratio (SAR)
- Texture (percent sand, silt, and clay)
- Selenium (Se) and Boron (B) in mg/kg
- Gypsum (meq/100g)